

Claims

- [c1] An imaging coil comprising:
a plurality of end rings;
at least one center ring extending parallel to and coupled between said plurality of end rings; and
a plurality of legs coupled between said plurality of end rings and said at least one center ring;
said plurality of end rings having a first radius greater than a second radius of said center ring.
- [c2] A coil as in claim 1 wherein at least one of said plurality of end rings is elevated.
- [c3] A coil as in claim 1 wherein said first radius is approximately 1.0cm greater in length than said second radius.
- [c4] A coil as in claim 1 wherein said first radius is approximately 31.5cm.
- [c5] A coil as in claim 1 wherein said second radius is approximately 30.5cm.
- [c6] A coil as in claim 1 wherein said plurality of legs comprises more than 16 legs.

[c7] A coil as in claim 1 further comprising a plurality of capacitor groupings coupled along said plurality of end rings, each capacitor grouping comprising a plurality of capacitors having a coverage area with a width approximately greater than 5.0cm.

[c8] A coil as in claim 1 wherein said at least one center ring is coupled to a ground reference and has low impedance such that said at least one center ring is effectively shorted to said ground reference.

[c9] A coil as in claim 1 wherein said plurality of end rings, at least one center ring, and said plurality of legs are configured to form a birdcage style imaging coil.

[c10] An imaging coil comprising:
a plurality of end rings;
at least one center ring extending parallel to and coupled between said plurality of end rings; and
a plurality of legs coupled between said plurality of end rings and said at least one center ring, said plurality of legs comprising more than 16 legs.

[c11] A coil as in claim 10 wherein said plurality of end rings, at least one center ring, and said plurality of legs are configured to form a birdcage style imaging coil.

[c12] An imaging coil comprising:

a plurality of end rings;
at least one center ring extending parallel to and coupled between said plurality of end rings;
a plurality of legs coupled between said plurality of end rings and said at least one center ring; and
a plurality of capacitor groupings coupled along said plurality of end rings, each capacitor grouping comprising a plurality of capacitors having a coverage area with a width greater than 5.0cm.

[c13] A coil as in claim 12 wherein said plurality of end rings, at least one center ring, said plurality of legs, and plurality of capacitor groupings are configured to form a bird-cage style imaging coil.

[c14] An imaging coil comprising:
a plurality of end rings;
at least one center ring extending parallel to and coupled between said plurality of end rings, said at least one center ring coupled to a ground reference and having low impedance such that said center ring is effectively shorted to said ground reference; and
a plurality of legs coupled between said plurality of end rings and said at least one center ring.

[c15] A coil as in claim 14 wherein said plurality of end rings, at least one center ring, and said plurality of legs are

configured to form a birdcage style imaging coil.

[c16] A coil as in claim 14 wherein said at least one center ring comprises a plurality of capacitors having low impedance.

[c17] A coil as in claim 16 wherein said plurality of capacitors have low impedance at frequency levels of approximately greater than or equal to 120MHz.

[c18] A coil as in claim 14 wherein said plurality of end rings are driven via a plurality of balun-less drive cables.

[c19] A magnetic resonance imaging system having a patient bore, said system comprising:
a radio frequency shield; and
an imaging coil comprising;
a plurality of end rings;
at least one center ring extending parallel to and coupled between said plurality of end rings; and
a plurality of legs coupled between said plurality of end rings and said at least one center ring;
said plurality of end rings having a first radius greater than a second radius of said center ring.

[c20] A coil as in claim 19 further comprising a driver coupled to said plurality of end rings via balun-less drive cables.

- [c21] A coil as in claim 19 wherein said plurality of end rings are closer to said radio frequency shield than said at least one center ring.
- [c22] A coil as in claim 19 wherein said plurality of end rings are farther away from the patient bore than said at least one center ring.
- [c23] A coil as in claim 19 wherein said plurality of legs comprises more than 16 legs.
- [c24] A coil as in claim 19 further comprising a plurality of capacitor groupings coupled along said plurality of end rings, each capacitor grouping comprising a plurality of capacitors having a coverage area with a width greater than 5.0cm.
- [c25] A coil as in claim 19 wherein said at least one center ring is coupled to a ground reference and has low impedance such that said at least one center ring is effectively shorted to said ground reference.